

**IN THE CLAIMS:**

1           Claims 1-3 (Canceled)

1           4. (Previously presented) A method executed in a computer system having at  
2           least one processor for determining axial rotation of a pelvis from a single  
3           fluoroscopic image, comprising

4           A. receiving a fluoroscopic image of said pelvis in the near AP direction;  
5           B. defining first and second landmarks of said pelvis on said image, said  
6           landmarks separated from each other in at least an anterior-posterior direction;  
7           C. determining the transaxial displacement of said landmarks on said image;  
8           and  
9           D. using said displacement to determine the axial rotation of said pelvis with  
10           respect to the plane of said fluoroscopic image.

1           5. (Original) A method according to claim 4 in which said first landmark  
2           comprises the image point of the pubic symphysis.

1           6. (Original) A method according to claim 5 in which said second landmark  
2           comprises the midpoint of a line between the image points of the left and right  
3           sacroiliac joints.

1           7. (Original) A method according to claim 4 in which said displacement is  
2           normalized with respect to the separation between a further pair of landmarks.

1           8. (Original) A method according to claim 7 in which said further pair of  
2           landmarks comprises the left and right teardrops.

1           9. (Previously presented) A method executed in a computer system having at  
2    least one processor for determining the transaxial rotation of a pelvis from a single  
3    fluoroscopic image, comprising

4           A. receiving a fluoroscopic image of said pelvis in the near AP direction;  
5           B. defining first and second landmarks of said pelvis on said image, said  
6    landmarks separated from each other in at least an anterior-posterior direction;  
7           C. determining the axial displacement of said landmarks on said image; and  
8           D. using said displacement as a measure of the transaxial rotation of said  
9    pelvis with respect to the plane of said fluoroscopic image.

1           10. (Original) A method according to claim 9 in which said first landmark  
2    comprises the image point of the pubic symphysis.

1           11. (Original) A method according to claim 10 in which said second  
2    landmark comprises the midpoint of a line between the image points of the left and  
3    right sacroiliac joints.

1           12. (Original) A method according to claim 11 in which said displacement is  
2    normalized with respect to the separation between a further pair of landmarks.

1           13. (Original) A method according to claim 12 in which said further pair of  
2    landmarks comprises the left and right teardrops.

1           14. (Original) A method according to claim 12 in which the transaxial  
2    rotation is taken as a function of the relation of said displacement to the  
3    corresponding displacements on the fluoroscopic images of a sample of pelvises  
4    taken at known orientation to the fluoroscopic image plane.

1           15. (Previously presented) A computer-readable medium comprising  
2    instructions executable by at least one processing entity for determining a patient-

3 specific pelvic coordinate system from a single near AP intra-operative image of the  
4 patient, the medium comprising:

5 instructions to receive a single intra-operative fluoroscopic image of the  
6 patient's pelvis in the near AP direction;

7 instructions to define first and second landmarks of said pelvis on said image,  
8 said landmarks being separated from each other in at least an anterior-posterior  
9 direction;

10 instructions to determine the transaxial displacement of said landmarks on  
11 said image;

12 instructions to determine the axial displacement of said landmarks on said  
13 image;

14 instructions to calculate an axial rotation of said pelvis with respect to the  
15 plane of said image based on the transaxial displacement, and

16 instructions to calculate a transaxial rotation of said pelvis with the respect to  
17 the plane of said image based on the axial displacement.

1 16. (Previously presented) The computer-readable medium of claim 15  
2 wherein said first landmark comprises the image point of the pubic symphysis.

1 17. (Previously presented) The computer-readable medium of claim 15  
2 wherein the second landmark comprises the midpoint of a line between corresponding  
3 points on said image of the left and right sacroiliac joints.

1 18. (Previously presented) The computer-readable medium of claim 15  
2 wherein said displacements are normalized with respect to the separation between a  
3 further pair of landmarks on the pelvis.

1 19. (Previously presented) The computer-readable medium of claim 18  
2 wherein said further pair of landmarks comprises the left and right teardrops.

1           20. (Previously presented) The computer-readable medium of claim 4 wherein the  
2 transaxial rotation is taken as a function of the relation of said axial displacement to the  
3 corresponding displacements of electronic images of a sample of pelvises taken at a  
4 known orientation to said fluoroscopic image.

5           21. (Previously presented) The computer-readable medium of claim 15 wherein  
6 the axial displacement is  $k$ , and the transaxial rotation is a function of:

7            $v - v_o$   
8           where  $v_o$  is the axial displacement distance corresponding to a non-rotated pelvis.